

**ENGLISH SPEAKING GROUP NUCLEAR MEDICINE PROGRAM
SEMINARS AND CLASSES IV Medical Faculty 2023/2024**

LEC. I (2 X 45 min.) E-LERNING

prof. dr hab. med. Bożena Birkenfeld

Introduction to nuclear medicine

History of nuclear medicine
Metabolic imaging.
Theranostics.

SEM I (2x45 min.)

dr hab. n. med. Hanna Piwowarska-Bilska, prof.

PUM

Physical background of nuclear medicine.

Detection and measurements of nuclear radiation. Radionuclide imaging technics

- ✓ Structure of the atom.
- ✓ Radioactive decay
- ✓ Particle and photon interaction with the matter.
- ✓ Radiation protection
- ✓ Detectors used for radioactivity measurement.
- ✓ Gamma counting systems.
- ✓ Single-photon emission-computed tomography.
- ✓ Positron emission tomography

SEM. II (2 x 45 min.)

prof. dr hab. med. Bożena Birkenfeld

Radionuclide diagnosis and treatment

- ✓ Bone scintigraphy and radionuclide treatment.
- ✓ Theranostics.
- ✓ Myocardial perfusion scintigraphy
- ✓ PET/CT in clinical practice

Practical hours 1 (3 x 45 min.)

dr med. Maria H. Listewnik.

Diagnosis and therapy of thyroid diseases.

- ✓ Introduction: repetition of anatomy and physiology of thyroid diseases.
- ✓ Physiology and pathology of hypothalamic-pituitary-thyroid axis.
- ✓ Diagnosis of thyroid function in radioisotope methods:
 - laboratory assessment
 - thyroid imaging in clinical context
- ✓ Treatment of thyroid diseases with iodine I-131.
- ✓ Parathyroid scintigraphy
- ✓ Scintimammography
- ✓ Gastrointestinal tract investigations.

Practical hours 2 (3 x 45 min.)

dr hab. n. med. Hanna Piwowska-Bilska

Radiopharmacy. Radiation protection.

- ✓ Radionuclide generators of short-lived nuclides.
- ✓ Radiopharmacy laboratory design
- ✓ Fundamentals of radiation biology
- ✓ Radiation protection of medical staff and patients
- ✓ Dosimetry
- ✓ Radionuclide for therapy

Practical hours 3 (3 x 45 min.)

dr n. med. Jacek Iwanowski

Detection and measurement of nuclear radiation. Radionuclide imaging technique.

- ✓ Detectors used for radioactivity measurement.
- ✓ Gamma counting system.
- ✓ Single-photon emission-computed tomography
- ✓ Positron emission tomography
- ✓ Multimodality imaging. SPECT/CT, PET/CT systems

Practical hours 4 (2 x 45 min.)

lek. Marta Malarz, lek. Piotr Przybylski

Clinical nuclear medicine. Part I

- ✓ Myocardial perfusion scintigraphy
- ✓ Lymphoscintigraphy – sentinel lymphnode biopsy
- ✓ Radionuclide imaging of central nervous system
- ✓ Radionuclide diagnosis of pulmonary embolism.
- ✓

Practical hours 5 (2 x 45 min.)

Prof. dr med. Bożena Birkenfeld,

dr n. med. Dominik Skupiński,

lek. Małgorzata Poniatońska

Clinical nuclear medicine. Part II

- ✓ Bone scintigraphy in clinical practice.
- ✓ Radionuclide therapy - radiosynovectomy.
- ✓ Dynamic and static renal scintigraphy
- ✓ Imaging of infection.
- ✓ Neuroendocrine tumors - diagnosis and treatment